

iii) wherein said carbon particles have an interparticle spacing wherein the filter has a VRI of at least about 99.99% at a flow rate of 100 mL/min. at 1 hour at an influent concentration of  $5 \times 10^8$  MS-2 bacteriophages per liter; and

C1  
cont. (b) information which communicates to a user that the filter may be used to remove nano-sized pathogens from a liquid.

17. (Amended) A filter for removing viruses from water, comprising:

a filter housing;

C2 a filter core disposed within said filter housing consisting essentially of particles selected from the group comprising of at least some activated carbon particles and at least some non-carbonaceous particles; and

wherein said carbon particles and said non-carbonaceous particles are arranged to have an interparticle spacing, wherein the filter has a VRI of at least about 99.99% at a flow rate of 100 mL/min. at 1 hour at an influent concentration of  $5 \times 10^8$  MS-2 bacteriophages per liter.

#### REMARKS

The pending claims are 12-23. Claims 12 and 17, which are the independent claims of those pending, have been amended. Each of these amendments is fully supported by the specification and claims as originally filed and no new matter is believed or intended to be involved. Attached hereto is a marked-up version of the changes made to the specification entitled "Version with markings to show changes made", wherein additions have been underlined and deletions appear between brackets.

#### I. Rejection Under 35 U.S.C. § 112, First Paragraph

The Examiner rejected pending claims 12-23 under 35 USC § 112, first paragraph, contending that "[t]he limitations: (1) that the filter includes a housing (claim 12, line 3; and claim 17, line 2); and (2) that a filter core is disposed in the housing (claim 12, line 4; and claim 17, line 3) do not appear to be supported by the disclosure originally filed, and hence constitute **new matter**."

The terms "housing" and "filter core" were adequately described in the original specification to reasonably convey to one skilled in the art that Applicant had possession of said terms as part of Applicant's invention, and should not constitute new matter. Applicant respectfully points out that the terms "housing" and "filter core" are referred to several times in

the original disclosure in a manner that describes the function of said “housing” and “filter core”, including: (1) “...the filter will comprise a housing for containing the activated carbon particles.” (page 8, lines 7 and 8); (2) “... the filter will comprise a housing containing a generally cylindrical filter arrangement.” (page 8, lines 11 and 12); (3) “The housing has a liquid inlet and liquid outlet and defines a liquid flow path between the inlet and outlet.” (page 8, lines 12 and 13); (4) “The ACP arrangement is disposed within the housing in the liquid flow path and comprises a cylindrically shaped porous structure...” (page 8, lines 13 and 14); (5) “A filter core (KX Industries #20-185-125-083, KX Industries, L.P., Orange, CT) is inserted into a filter housing (USWP#1A).” (page 10, lines 5 and 6); and (6) “The filter housing is connected to ...” (page 10, line 6).

A working example of the invention, which includes specific models of a “housing” and a “filter core”, is detailed in the original specification (page 10, line 4). One with skill in the art would easily be able to obtain such housings and filter cores to gain instant understanding of these elements. After reading Section V (page 10, line 4) of the specification, one with skill in the art should easily be able to reproduce the Example, using exactly the housing and filter core that Applicant used.

The multiple descriptions of “housing” and “filter core” in the specification, the description of function of said elements, and the specific examples which call out model numbers of said elements must be seen as adequate description to support use of said elements in the claims, and said elements should not be considered new matter.

## **II. Rejection Under 35 U.S.C. § 112, Second Paragraph**

Examiner rejected pending claims 12-23 under 35 USC § 112, second paragraph, contending that “[t]he term ‘information’ which communicates to a user that the filter may be used to remove nano-sized pathogens from a liquid’ (claim 12, last two lines) is vague, and indefinite as to the structural limitation intended.”

The structural form of the term “information” was specifically and definitely described in the original specification. Applicant respectfully points out that the specification discloses that “information” may be in the form of “words and/or...pictures” (page 8, lines 21 and 22). Further, information “can include, e.g., advertising in all of the usual media, as well as statements and icons on the package, or the filter itself...” (page 8, lines 30 and 31). These examples, especially packages and information are structural in nature (e.g., packages, filters, etc.) and should be deemed to provide adequate structural description of information.

Examiner revealed a typographical error of the term “pathogents” in claim 12 (last line). Applicant has addressed and corrected such above.

Examiner revealed a typographical error of the term “non-carbonaceous” in claim 12 (lines 6 and 7) and claim 17 (lines 4 and 6). Applicant has addressed and corrected such above.

Examiner indicates that the wording “said carbon particles and said non-carbonaceous particles are arranged...” (claim 17, lines 6-9) is indefinite since the filter core will not necessarily contain both activated carbon and non-carbonaceous particles. Applicant has amended claim 17 to clarify any ambiguity.

Examiner noted that claims 13-16 and 18-23 depend from either claim 12 or 17, and are therefore indefinite. Applicant believes that this Response will place claims 12 and 17, and thus claims 13-16 and 18-23, in a position for allowance.

### **III. Rejection Under 35 U.S.C. § 102(b)**

Examiner rejected pending claims 17 and 20-23, contending that these claims were anticipated by the *Wallis* patent. Claim 17 requires that the filter core contain both activated carbon particles and non-carbonaceous particles. Claim 17 has been amended to make such clear. However, *Wallis* only ever teaches a filter core having carbon particles. This differentiation overcomes *Wallis* as an anticipatory reference. Thus, claim 17, and those claims dependent thereon, are not anticipated by *Wallis*.

### **IV. Rejection Under 35 U.S.C. § 103(a)**

Examiner rejected pending claims 12-16, 18 and 19, contending that these claims are unpatentable over the *Wallis* patent. Claim 12 has been amended to exclude sodium hydroxide treated carbon. However, *Wallis* requires that its carbon be treated with sodium hydroxide. Without sodium hydroxide treatment, *Wallis* would not be able to achieve its alleged VRI (*See* Applicant’s last response, dated February 26, 2002, pointing out that *Wallis* depends on chemical modification to achieve its alleged VRI). Additionally, *Wallis* only ever discloses a bulk density of 0.07 g/cm<sup>3</sup> (*See* Examples 1, 3, and 4), while Applicant teaches a preferred bulk density of “about 0.1 to about 1.2 g/cm<sup>3</sup>, preferably from about 0.4 to about 1.0 g/cm<sup>3</sup>, still more preferably about 0.6 to about 0.8 g/cm<sup>3</sup>”, and thus, a preferred interparticle spacing (page 4, lines 30-32, and page 5, lines 1-5 and 25-27). It would not have been obvious, but rather, contrary to the teachings of *Wallis*, for Applicant to remove sodium hydroxide from its invention, and for Applicant to focus on an interparticle spacing outside of the spacing taught by *Wallis*. Thus, for these reasons, Applicant’s claim 12, and those claims dependent thereon, are not obvious in light of *Wallis*.

As mentioned above, claim 17 requires that the filter core contain both activated carbon particles and non-carbonaceous particles. However, *Wallis* only ever teaches a filter core having carbon particles because the less treated carbon in its filter, the less spectacular *Wallis*’ VRI.

Thus, it would not have been obvious, but rather, contrary to the teachings of *Wallis*, for Applicant to add non-carbonaceous particles to its filter. Thus, for these reasons, Applicant's claim 17, and those claims dependent thereon (including 18 and 19), are not obvious in light of *Wallis*.

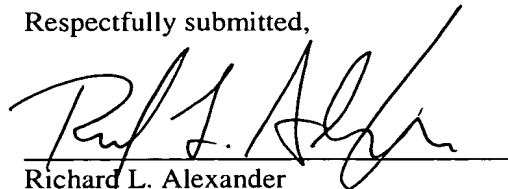
Pursuant to MPEP § 609(I)(A)(2), an Information Disclosure Statement is forthcoming.

Pursuant to 37 C.F.R. § 1.133, Applicant is making of record the telephonic interview initiated by Applicant on April 21, 2003, and conducted between Examiner and the undersigned. Applicant appreciates the willingness of Examiner Cintins to discuss this Case. Applicant discussed with Examiner a proposed Response to the Office Action mailed October 22, 2002, the discussion included the following:

1. In order to overcome rejection of claims under U.S.C. § 102, Examiner favorably responded to Applicant's suggestion to amend claim 17, making it clear that claim 17 requires carbon and non-carbonaceous particles;
2. In order to overcome rejection of claims under U.S.C. § 103, Examiner suggested amendment of claim 12 such that it excludes sodium hydroxide treated carbon.
3. In order to overcome rejection of claims under U.S.C. § 112, Examiner favorably responded to Applicant's identification of specific examples of structural support in the specification for "information".

In light of the amendments to the claims, the above remarks, and the telephonic interview, it is requested that Examiner reconsider and withdraw the rejections under 35 USC §§ 112, 102, and 103. Early and favorable action in the case is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "R. L. Alexander", is written over a horizontal line.

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

Claims 12 and 17 have been amended as follows:

12. (Amended) An article of manufacture, comprising:
- (a) a filter, including:
    - i) housing;
    - ii) a filter core disposed within said filter housing consisting essentially of particles selected from the group of activated carbon particles, excluding sodium hydroxide treated activated carbon particles, and [a mixture of activated carbon particles and non-carbonaceous] non-carbonaceous particles;
    - iii) wherein said carbon particles have an interparticle spacing [whereby] wherein the filter has a VRI of at least about 99.99% at a flow rate of 100 mL/min. at 1 hour at an influent concentration of  $5 \times 10^8$  MS-2 bacteriophages per liter; and
  - (b) information which communicates to a user that the filter may be used to remove nano-sized [pathogens] pathogens from a liquid.
17. (Amended) A filter for removing viruses from water, comprising:
- a filter housing;
  - a filter core disposed within said filter housing consisting essentially of particles selected from the group comprising of at least some activated carbon particles and [non-carbonaceous] at least some non-carbonaceous particles; and
  - wherein said carbon particles and said [non-carbonaceous] non-carbonaceous particles are arranged to have an interparticle spacing, [whereby] wherein the filter has a VRI of at least about 99.99% at a flow rate of 100 [mL/min.] mL/min. at 1 hour at an influent concentration of  $5 \times 10^8$  MS-2 bacteriophages per liter.